

- 19 -

What is claimed is:

1. Method for the isolation of mesenchymal stem cells from bone marrow by density gradient centrifugation, wherein the cells are isolated from a fraction having a density of < 1.073 g/ml.
2. Method according to claim 1, wherein the cells are isolated from a fraction having a density of ≤ 1.070 g/ml.
3. Method according to claim 2, wherein the cells are isolated from a fraction having a density of 1.050 g/ml to 1.070 g/ml.
4. Method according to claims 1 to 3, wherein an isotonic solution of Ficoll® or Percoll® is used to perform the density gradient centrifugation.
5. Method according to claim 4, wherein an isotonic solution of Percoll® is used to perform the density gradient centrifugation and the cells are isolated from a fraction having a density of about 1.068 g/ml.
6. Mesenchymal stem cells, obtained according to a method of claims 1 to 5.
7. Pharmaceutical preparation, containing cells according to claim 6.

- 20 -

8. Method for the manufacture of a pharmaceutical preparation containing mesenchymal stem cells, wherein a method according to claims 1 to 5 is performed and the isolated stem cells are formulated if necessary with pharmaceutically acceptable excipients and carriers.
9. Kit for performing a method according to claims 1 to 5, containing an isotonic solution of Ficoll® or Percoll® of density 1.068 g/ml.
10. Kit for performing a method according to claims 1 to 5, containing several isotonic solutions of Ficoll® or Percoll® of differing density.
11. Kit according to claim 10, wherein the solutions of differing density are in the range of 1.050 g/ml to 1.100 g/ml.
12. Kit according to claim 11, wherein the solutions are Percoll® solutions of density 1.050 g/ml, 1.063 g/ml, 1.068 g/ml and 1.070 g/ml.
13. Kit according to claims 9 to 12, containing other aids and/or reagents required for performance of the method.
14. Use of a solution of Ficoll® or Percoll® of density 1.068 g/ml for performing a density gradient centrifugation for isolating mesenchymal stem cells from bone marrow.